

Conceptual study on Japanese altimetry mission

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Measurement of sea surface height is important in satellite measurement of ocean as well as sea surface temperature, ocean color, sea surface wind velocity, etc. JAXA has started a conceptual study on a new altimetry mission. In the mission, using a interferometric synthetic aperture radar (In-SAR) with two antennas, wide-swath measurement of sea surface height is aimed. Studies on target specification and system feasibilities are ongoing.

The main four purposes of the mission are as follows;

Forecasting of the ocean current;

The aim is to improve the tidal model and forecasting of the ocean current especially in coastal regions and marginal seas using four-dimensional assimilation. Improvement of ocean current forecasting is expected for estimation of current drift caused by ocean accidents, efficiency of marine navigation, and diffusion of radioactive material.

Fishery;

The aim is to observe ocean phenomena related to fishery places, such as Kuroshio-front and ocean surface topography from mesoscale to submesoscale.

Disaster;

The aim is to improve Tsunami forecast model using inversion method through the observation of Tsunami waves caused by an earthquake in far region.

Geoid and seafloor topography;

The aim is to improve sea floor topography model through improvement of geoid model.

We will present current status of the conceptual study.

Keywords: altimetry, ocean current, fishery, disaster, geoid, interferometric synthetic aperture radar